These concentrations exceed the United States Environmental Protection Agency's (EPA's) action levels of 2.7 $\mu g/m^3$ for soil vapor and 0.38 $\mu g/m^3$ for indoor air, respectively	Letter to residents, signed by John DiMartino Remedial Project Manager New York Remediation Branch	
Trichloroethylene (TCE) vapor was detected beneath your business at a concentration of 1.3 micrograms per cubic meter ($\mu g/m^3$). Based upon these results, EPA recommends that a mitigation (reduction) system be installed in your home.	Rick Ehrhart RCRA Corrective Action Coordinator Corrective Action / Waste Minimization Section (6PD-C) U.S. Environmental Protection Agency - Region 6	
Trichloroethylene (TCE) vapor was detected beneath your home at a concentration of 23 micrograms per cubic meter ($\mu g/m^3$), and inside your home at 0.61 $\mu g/m^3$. Based upon these results, EPA recommends that a mitigation (reduction) system be installed in your home.	Rick Ehrhart RCRA Corrective Action Coordinator Corrective Action / Waste Minimization Section (6PD-C) U.S. Environmental Protection Agency - Region 6	
. In the case of TCE, the New York State Department of Health did a current review of the literature and found that the level to protect against non-carcinogenic effects is around 10 ug/m^3.	Basis of Recommended Remediation Approach for Sites Impacted by Vapor Intrusion of TCE	
EPA used the following screening and action levels for TCE during the Removal Assessment: 1. Property Soil Vapor: 41 parts per billion by volume (ppbv) [1] 2. Sub Slab Soil Vapor: 4.1 ppbv [2] 3. Indoor Air – Agency for Toxic Substances and Disease Registry (ATSDR) Health Consultation for each residential dwelling tested 4. EPA Drinking Water MCL: 5 ppb [3] 5. PADEP Fish and Aquatic Life Criteria: Continuous Concentrations : 450 ppb with Maximum Concentration of 2,300 ppb [4] 6. PADEP Human Health Criteria: 2.7 ppb [5] 7. RBC for Soil: 7.2 mg/kg	Request for Funding for Removal Action at the Perkasie TCE Site, Borough of Perkasie, Bucks County, Pennsylvania From: Richard M. Fetzer, On-Scene Coordinator note 41 ppbv = 220 microgram/cu m	

EPA initially addressed all homes with sub-slab TCE vapor levels exceeding 50 ug/m^3 However, in February 2005, we adopted a revised indoor air cleanup goal of 0.38 ug/m^3 for the Hopewell Precision site.	Testimony of George Pavlou Director, Division of Emergency and Remedial Response U.S. Environmental Protection Agency, Region 2 Before the Subcommittee on Water Resources House Committee on Transportation and Infrastructure	
79016 Trichloroethylene 2.2E-02 microgram/cu m	OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)	

Indoor Air Concentration ug/m3	**Priority**
>10	First
5-10	High
1.2-5	Site-Specific
<1.2	Low

ATSDR Minimal Risk Levels (MRLs)
November 2007

Name	Route	Duration	MRL	Factors	Endpoint	Draft/ Final	Cover Date	CAS Number
TRICHLOROETHYLENE	Inh.	Acute	2 ppm	30	Neurol.	Final	09/97	000079-01-6
		Int.	0.1 ppm	300	Neurol.			
	Oral	Acute	0.2 mg/kg/day	300	Develop.			

2 ppm = 10,750 microgram /cubic meter
0.1 ppm = 538 microgram /cubic meter

Contaminant		Toxicity and Chemical-specific Information					Carcinogenic Targ
		IUR		RfCi			
Analyte	CAS No.	(ug/m3)-1	key	(mg/m3)	key	voc mutagen	ug/m3
Trichloroethylene	79-01-6	2.0E-06	C		V		1.2E+00

HEALTH CONSULTATION

GRANTS CHLORINATED SOLVENTS PLUME
GRANTS, CIBOLA COUNTY, NEW MEXICO

ATSDR derives Minimum Risk Levels (MRL) that can be used to evaluate the risks posed by exposure to hazardous chemicals. A MRL is an estimate of daily human exposure to a dose of a chemical that is likely to be without an appreciable risk of adverse noncancerous effects over a specified duration of exposure. The MRL for intermediate term exposures (15-364 days) to TCE is 100 ppb (546 µg/m^3). None of the measured indoor air concentrations of TCE exceeded this value. The MRL for chronic term exposures ($\geq$365 days) to PCE is 40 ppb (271 µg/m^3). None of the measured indoor air concentrations of TCE or PCE exceeded this value. Therefore, no non-cancer adverse health effects would be expected to result from exposure to the concentrations of TCE and PCE detected in indoor air during the sampling event.

Experimental studies have shown that exposure to high doses of TCE or PCE can cause cancer in laboratory animals. Epidemiological studies of human exposure to TCE and PCE have given mixed results: some studies concluded that human exposure to these chemicals is associated with an increased risk of cancer, whereas other studies have seen no such effect. On the basis of the available evidence, the Department of Health and Human Services categorized both TCE and PCE as reasonably anticipated to be a human carcinogen.

EPA has withdrawn its cancer slope factors for TCE and PCE pending further evaluation. Therefore, the increased cancer risks, if any, from inhalation exposures to TCE and PCE cannot be quantitated. Furthermore, a one-time measurement of indoor air VOC concentrations may not be representative of long-term exposures.

Region 3 guidance

TCE concentration in indoor air	**EPA Risk Management Considerations**
< 1 ug/m^3	Generally not of concern; no mitigative action likely
1 – 10 ug/m^3	May be of concern for long-term exposure, depending upon multiple considerations (identified in narrative below)
10 – 100 ug/m^3	- Likely to be of concern; remedial action likely - Removal action possible dependent on multiple considerations (identified in narrative below)
> 100 ug/m^3	- Likely to be of concern even for shorter-term exposure; - Removal action/exposure mitigation likely